

WE CLAIM:

1. A pharmaceutical composition for treating a microbial infection in an animal,
said composition comprising:
 - 5 (a) antimicrobial compound, wherein said antimicrobial compound comprises an organic phenolic compound chemically reacted with a Group I salt; and
 - (b) a pharmaceutically acceptable carrier.
- 10 2. The pharmaceutical composition of claim 1 wherein the organic phenolic compound is selected from the group consisting of isopropyl-o-cresol, isopropyl-cresol and combinations thereof.
3. The pharmaceutical composition of claim 1 wherein the Group I salt is a Group I
15 chloride salt.
4. The pharmaceutical composition of claim 3 wherein the Group I salt is selected from the group consisting of sodium chloride, potassium chloride and combinations thereof.
- 20 5. The pharmaceutical composition of claim 1 wherein the antimicrobial compound comprises isopropyl-o-cresol and isopropyl-cresol chemically reacted with sodium chloride and potassium chloride.
- 25 6. The pharmaceutical composition of claim 1 comprising 10% antimicrobial compound.
7. The pharmaceutical composition of claim 1 wherein the antimicrobial compound comprises sodium-para-cresol, potassium-para-cresol, sodium-M-cresol and
30 potassium-M-cresol.

8. The pharmaceutical composition of claim 1 wherein the antimicrobial compound comprises 97wt% sodium-para-cresol and potassium-para-cresol and 3 wt% sodium-M-cresol and potassium-M-cresol.
- 5 9. The pharmaceutical composition of claim 1 wherein the microbial infection is selected from the group consisting of a bacterial infection, fungal infection, protozoan infection and yeast infection.
- 10 10. The pharmaceutical composition of claim 1 wherein the animal is selected from the group consisting of humans, horses, cows, pigs, sheep, goats, rabbits, dogs, cats, chickens, turkeys, ducks and birds.
11. A method for treating a microbial infection in an animal, said method comprising:
- 15 (a) administering to the animal an antimicrobial compound, wherein said antimicrobial compound comprises an organic phenolic compound chemically reacted with a Group I salt.
12. The method of claim 11 wherein the organic phenolic compound is selected from the group consisting of isopropyl-o-cresol, isopropyl-cresol and combinations thereof.
- 20 13. The method of claim 11 wherein the Group I salt is a Group I chloride salt.
- 25 14. The method of claim 13 wherein the Group I salt is selected from the group consisting of sodium chloride, potassium chloride and combinations thereof.
15. The method of claim 11 wherein the antimicrobial compound comprises isopropyl-o-cresol and isopropyl-cresol chemically reacted with sodium chloride and potassium chloride.
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16. The method of claim 11 wherein the antimicrobial compound comprises sodium-para-cresol, potassium-para-cresol, sodium-M-cresol and potassium-M-cresol.
- 5 17. The method of claim 11 wherein the antimicrobial compound comprises 97wt% sodium-para-cresol and potassium-para-cresol and 3 wt% sodium-M-cresol and potassium-M-cresol.
- 10 18. The method of claim 11 wherein the microbial infection is selected from the group consisting of a bacterial infection, fungal infection, protozoan infection and yeast infection.
- 15 19. The method of claim 11 wherein the animal is selected from the group consisting of humans, horses, cows, pigs, sheep, goats, rabbits, dogs, cats, chickens, turkeys, ducks and birds.
- 20 20. A method of preparing an antimicrobial compound, comprising:
(a) mixing an organic phenolic compound and a Group I salt in a mixer at a speed of about 200 RPM to about 2000 RPM.
21. The method of claim 20 wherein the organic phenolic compound is selected from the group consisting of isopropyl-o-cresol, isopropyl-cresol and combinations thereof.
- 25 22. The method of claim 20 wherein the Group I salt is a Group I chloride salt.
23. The method of claim 22 wherein the Group I salt is selected from the group consisting of sodium chloride, potassium chloride and combinations thereof.
- 30 24. The method of claim 20 further comprising mixing at a temperature between about 60°C and about 100°C.

25. The method of claim 20 further comprising mixing for about 1 to about 20 minutes.
26. The method of claim 20 further comprising mixing for about 5 to about 15 minutes.
27. A method of preparing an antimicrobial compound, comprising:
(a) mixing an organic phenolic compound and an organic acid in a mixer at a speed of about 200 RPM to about 2000 RPM.
28. The method of claim 27 wherein the organic phenolic compound is selected from the group consisting of isopropyl-o-cresol, isopropyl-cresol and combinations thereof.
29. The method of claim 27 wherein the organic acid is selected from the group consisting of propionic acid, fumaric acid, citric acid, folic acid and combinations thereof.
30. The method of claim 27 further comprising mixing at a temperature between about 60°C and about 100°C.
31. The method of claim 27 further comprising mixing for about 1 to about 20 minutes.
32. The method of claim 27 further comprising mixing for about 5 to about 15 minutes.

33. An apparatus for high speed mixing, comprising:
(a) a receptacle, said receptacle comprising an inner wall, an outer wall and a base which define a cavity;
(b) a rotor which comprises a drive shaft and at least one blade;
5 (c) a heating element; and
(d) a motor.
34. The apparatus of claim 33 wherein the inner and outer walls of the receptacle are formed from a thermally conductive material selected from the group consisting of
10 ceramic, metal, plastic and glass.
35. The apparatus of claim 33 wherein the inner and outer walls of the receptacle are formed from a metal.
- 15 36. The apparatus of claim 35 wherein the metal comprises stainless steel.
37. The apparatus of claim 33 wherein the inner and outer walls are spaced apart to define a gap.
- 20 38. The apparatus of claim 37 wherein the gap is configured to receive a heating element.
39. The apparatus of claim 37 wherein the gap is configured to receive a liquid.
- 25 40. The apparatus of claim 33 further comprising an input conduit and an output conduit.
41. The apparatus of claim 40 further comprising valves having open and closed positions configured and arranged to allow reactants to be fed into the cavity and
30 product to be removed from the cavity when in an open position and obstruct passage of reactants or products when in a closed position.

42. The apparatus of claim 40 wherein the rotor comprises a plurality of blades configured as at least one propeller.

43. The apparatus of claim 42 wherein the rotor comprises a plurality of coaxial
5 propellers.